**Pre-Calculus**

* 1. **Notes**

**Day 8 & 9**

1. **Arithmetic combinations of functions**

**Ex. 1:** Find (f + g) x, given f(x) = 2x + 1 & g(x) = x2 + 2x – 1.

(f + g)x = f(x) + g(x)

=

**Ex. 2:** Find (f – g)x of the above functions and evaluate at x = 2.

(f – g)x = f(x) – g(x)

=

**Ex. 3:** Find the domains of x and x, given f(x) = and g(x) = .

1. x =

Domain of f:

Domain of g:

Intersection of these domains:

Domain of x:

1. x =

Domain of x:

1. **Composition of functions**

**Definition: (f g)(x) = f(g(x)); Domain of f g is a subset of the domain of g.**

**Ex. 4:** Given f(x) = x + 2, g(x) = 4 – x2, find:

1. (f g)(x)
2. (g f)(x)
3. (g f)(-2)

**Ex. 5:** Find (f g)(x) and its domain; given: f(x) = x2 – 9, g(x) = .

**Ex. 6:** Rewrite the function h(x) = as a composition of 2 functions.

Hint: Think “inner” and “outer” functions.

Inner →

Outer →

h(x) = =

1. **Applications**

**Ex. 7:** page 73